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Attorney Docket No.: 499058-A-01-US (Spencer)  
(PATENT)**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**In re Patent Application of:  
Douglas A. Spencer

Application No.: 09/943,283

Confirmation No.: 8771

Filed: 08/30/2001

Art Unit: 2665

For: Comprehensive Echo Control System

Examiner: Davis, Cynthia L.

**APPEAL BRIEF**MS Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This brief is filed within three months of the Notice of Appeal filed in this case on 04/10/2006, and is in furtherance of said Notice of Appeal. A Petition For An Extension Of Time of 1 month is enclosed.

The fees required under § 41.20(b)(2) are dealt with in the accompanying FEE TRANSMITTAL.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

07/12/2006 AWONDAF1 00000009 501602 09943283

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I.	Real Party In Interest
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I hereby certify that this correspondence is being facsimile transmitted to Commissioner, at fax No. 571-273-8300, on

07/10/2006

Date Being Faxed

John C. Moran  
Signature

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IX. Evidence  
X. Related Proceedings

Appendix A Claims  
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Appendix A Related Proceedings

**I. REAL PARTY IN INTEREST**

The real party in interest for this appeal is:

Avaya Technology Corp.

**II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS**

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

**III. STATUS OF CLAIMS**

**A. Total Number of Claims in Application**

There are 48 claims pending in application.

**B. Current Status of Claims**

Claims canceled: 2, 15, 22, 33, and 44

Claims withdrawn from consideration but not canceled: none

Claims pending: 1, 3-14, 16-21, 23-32, 34-43 and 45-53

Claims allowed: 0

Claims rejected: 1, 3-14, 16-21, 23-32, 34-43 and 45-53

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### C. Claims On Appeal

The claims on appeal are claims 1,3-14, 16-21, 23-32, 34-43 and 45-53.

### IV. STATUS OF AMENDMENTS

The Appellant filed an Amendment on 11/01/2005. In the Final Action, dated 01/11/2006, the Examiner indicated that Appellant's amendments were entered. No amendments were made in Appellant's Response of 06/21/2005

Accordingly, the claims enclosed herein as Appendix A incorporate the amendments indicated in the paper filed.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1 and 32 are directed to a method and apparatus for controlling echoes within a telecommunication switching system (FIG. 3 and page 9, line 12 through page 10, line 2 of Specification) having a number of local exchange carriers (329, 311). Each of the local exchange carriers has a number of local telephone switching offices (322-324, 319, 321) and connected to each of the local telephone switching offices is a number of telephone sets (322-326, 336, 337). A local telecommunication switch (300), which is one a plurality of local telecommunication switches, interconnects the local exchange carriers. (Within the specification, the local telecommunication switch is also referred to as a PBX, business communication system or enterprise switching system - page 4, lines 20 and 21, and page 7, lines 12 and 13.) The local telecommunication switch is connected to a second one of the local exchange carriers (311). When the local telecommunication switch receives a call setup message from a telephone set (326) connected to a first one of the local exchange carriers

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(329) via a first trunk circuit (306, 331) that interconnects the local telecommunication switch with the first local exchange carrier, the local telecommunication switch determines that the call setup message designates one of the telephone sets (336, 337) connected to the second local exchange carrier (311) as the destination of the call. The local telecommunication switch also determines from the call setup message that the calling telephone set is connected to a first one of the local telephone switching offices (324) of the first local exchange carrier and that this first local telephone office requires echo cancellation operations. Using the first trunk, the local telecommunication switch provides the echo cancellation operations that are required by the first local telephone switching office for a first call path that extends from the local telecommunication switch to the first local telephone switching office of the first local exchange carrier. Finally, the local telecommunication switch adjusts the echo cancellation capabilities of the first trunk circuit with respect to an echo tail length upon the first call path being established. (See FIGS. 6-9 and pages 20-24 of the Specification.)

Dependent claims 5 and 36 add to claims 1 and 32, respectively, that there is a second (309) and third (304) trunk circuit in addition to the first trunk circuit. The third trunk circuit is part of a second call path that extends from the local telecommunication switch to a first one of a plurality of local telephone switching offices of the second local exchange carrier. The local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The local telecommunication switch establishes an internal path from the first and second call path through the first trunk circuit, switching network (302), second trunk circuit, switching network and third trunk circuit. The local telecommunication switch then enables the second trunk circuit to provide echo cancellation operations on audio information coming from the third trunk circuit. (See page 7, lines 21-26 and page 16, lines 1-18 of the Specification.) The end result is

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that the second trunk circuit is providing the echo cancellation operations rather than the third trunk circuit for the second call path which connects the second path to the local telecommunication switch.

Dependent claims 7 and 38 add to claims 1 and 32, respectively, a second trunk circuit in addition to the first trunk circuit wherein the second trunk circuit (304) is part of a second call path from the first local telecommunication switch to a first one of a second plurality of local telephone switching offices of the second local exchange carrier. The local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, a switching network (302), and the second trunk circuit. The local telecommunication switch then enables the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (See page 7, lines 21-26 and page 15, lines 2-18 of the Specification.) The result is that the second trunk circuit is providing the echo cancellation operations in addition to the echo cancellation operations provided for by the first trunk circuit for the first call path.

Dependent claims 9 and 40 add to claims 1 and 32, respectively, a second (309) and third (304) trunk circuits in addition to the first trunk circuit wherein the third trunk circuit is part of a second call path from the first local telecommunication switch to a first one of a second plurality of local telephone switching offices of the second local exchange carrier. The local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, a switching network (302), second trunk circuit, and third trunk circuit. The local telecommunication switch then enables the

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second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (See page 7, lines 21-26 and page 16, lines 1-19 of the Specification.) The result is that the second trunk circuit is providing the echo cancellation operations in addition to the echo cancellation operations provided by the first trunk circuit for the first call path. In addition, the local telecommunication switch enables the third trunk circuit to provide echo cancellation operations on audio information coming from the second call path.

Dependent claims 11 and 42 add to claims 1 and 32, respectively, a second trunk circuit (304) in addition to the first trunk circuit wherein the second trunk circuit is part of a second call path from the first local telecommunication switch to a first one of a second plurality of local telephone switching offices of the second local exchange carrier. The local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, a switching network (302), and second trunk circuit. The local telecommunication switch enables the second trunk circuit to provide echo cancellation operations on audio information coming from the second call path after determining that the first one of the second plurality of local telephone switching offices of the second local exchange carrier requires echo cancellation operations.

Claim 13 is directed to a method for controlling echoes within a telecommunication switching system (FIG. 4 and page 17, line 5 through page 18, line 2 of the Specification) having a plurality of local exchange carriers (329, 311). Each of the local exchange carriers has a plurality of local telephone switching offices (322-324, 319, 321) and connected to each of the local telephone switching offices is a plurality of telephone sets (322-326, 336, 337). A first local telecommunication switch (300) is one of

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a plurality of local telecommunication switches (300, 401), interconnects the local exchange carriers. The local telecommunication switch is connected to a first one of the local exchange carriers (311) via a third one of the local exchange carriers (402) and a second local telecommunication switch (401).

When the first local telecommunication switch receives a call setup message from a first telephone (336, 337) connected to a first local exchange carrier via the third local exchange carrier and the second local telecommunication switch and a first trunk circuit (304) interconnecting the first local telecommunication switch with the third local exchange carrier, the first local telecommunication switch determines that the call setup message designates a second telephone (325, 326) of a first one of a second plurality of local telephone switching offices (322-324) of a second local exchange carrier (329) as the destination of the call. The first local telecommunication switch also determines in response to the call setup message that a first one of the first plurality of local telephone switching offices of the first local exchange carrier to which the first telephone is connected requires echo cancellation operations. Using the first trunk circuit, the first local telecommunication switch provides echo cancellation operations for a first call path from the first telecommunication switch to the first one of the local telephone switching offices of the first local exchange carrier. The first local telecommunication switch adjusts the echo cancellation capabilities of the first trunk circuit with respect to an echo tail length upon the first call path being established. (See FIGS. 6-9 and pages 20-24 of the Specification.)

Dependent claim 16 adds to claim 13 a second (309) and a third (306) trunk circuits. The third trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the second local exchange

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carrier. After verifying that the second trunk circuit has echo cancellation capabilities, the first local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, switching network, second trunk circuit, switching network and third trunk circuit. The first local telecommunication switch enables the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (See page 7, lines 21-26 and page 18, lines 14-22 of the Specification.) The end result is that the first and second trunk circuits are both supplying echo cancellation operations for the audio information of the first call path.

Dependent claim 17 adds to claim 13 a second trunk circuit (309) in addition to the first trunk circuit. The second trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the second local exchange carrier. The first local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The first local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, switching network, and second trunk circuit. The local telecommunication switch enables the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (See page 7, lines 21-26 and page 17, line 15 through page 18, line 2.) The end result is that the first and second trunk circuits are both supplying echo cancellation operations for the audio information of the first call path.

Dependent claim 18 adds to claim 13 a second (309) and third (306) trunk circuits in addition to the first trunk circuit. The third trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the second local exchange carrier. The first local



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telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The first local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, switching network, and second trunk circuit. The local telecommunication switch enables the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (See page 7, lines 21-26 and page 18, lines 14-22 of the Specification.) The end result is that the first and second trunk circuits are both supplying echo cancellation operations for the audio information of the first call path. In addition, the first local telecommunication switch determines from the call setup message that a first one of the second plurality of local telephone switching offices of the second local exchange carrier requires echo cancellation operations. Using the third trunk, the local telecommunication switch provides echo cancellation operations on audio information coming from the second call path.

Dependent claim 19 adds to claim 13 a second trunk circuit (309) in addition to the first trunk circuit. The second trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the second local exchange carrier. The first local telecommunication switch verifies that the second trunk circuit has echo cancellation capabilities. The first local telecommunication switch establishes an internal path from the first and second call paths through the first trunk circuit, switching network, and second trunk circuit. The local telecommunication switch enables the first trunk circuit to provide echo cancellation operations on audio information coming from the first call path. Further, the first local telecommunication switch determines in response to the call setup message that the first one of the second plurality of local telephone switching offices of the second local exchange carrier requires echo cancellation operations. Using the second trunk, the first local

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telecommunication switch provides echo cancellation operations on audio information coming from the second path.

Claims 20 and 42 are directed to a method and apparatus for controlling echoes within a telecommunication switching system (FIG. 3 and page 9, line 12 through page 11, line 3 of the Specification) having a number of local exchange carriers (329, 311), a plurality of local telecommunication switches (300), wide area network (313), pluralities of soft phones (314, 318), a plurality of remote switches (316). Each of the local exchange carriers is connected to a plurality of telephone sets (319, 321, 325, 326) attached to a plurality of local telephone switching offices (322-324, 319, 321).

Each of the plurality of remote switches is connected to a first plurality soft phones (318). The remote switches connect to a local telecommunications switch via the wide area network. The remote switches each provide echo cancellation circuits with each echo cancellation circuit having an echo tail length adjusted to eliminate an echo produced by each of the first plurality of soft phones. (See page 10, line 22 through page 11, line 3 of the Specification)

Each of a second plurality of soft phones (314) connect to the local telecommunication switch via the wide area network. Each of the second plurality of soft phones has an echo cancellation circuit having an echo tail length adjusted to eliminate an echo produced by each of the second plurality of soft phones. (See page 10, lines 17-22 of the Specification)

The local telecommunication switch interconnects a first local exchange carrier (329) to the wide area network. The first local exchange carrier interconnects to the local telecommunication switch via internal trunk circuits (306, 309). The local telecommunication switch provides echo cancellation operations by the trunk circuits to eliminate echoes

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produced by the first local exchange carrier on an individual call path basis. In addition, the local telecommunications switch adjusts the echo cancellation capabilities of the trunks with respect to an echo tail length upon the call path being established. (See FIGS. 6-9 and pages 20-24, page 10, lines 3-27, and page 8, lines 1-20 of the Specification.)

Dependent claims 21 and 43 add to claims 20 and 42, respectively, the fact that the local telecommunication switch provides echo cancellation by determining from the call setup message that a first local telephone switching office within the first local exchange carrier requires the echo cancellation operations. (See page 12, lines 16-18 of the Specification.) Clearly, not all of the local telephone switching offices in the first local exchange carrier may require echo cancellation operations.

Dependent claims 23 and 45 add to claims 20 and 42, respectively, the fact that the Internet protocol trunk circuit can also provide echo cancellation operation with respect to reducing the echo coming from the first local exchange carrier. (See page 13, lines 24-27 of the Specification.)

Dependent claims 24 and 46 add to claims 20 and 42, respectively, the fact that the call originating in the first exchange carrier is designated by the call setup message to be placed to one of the soft phones connected to a remote switch. The local telecommunication switch determines that the first local telephone switching office (as designated by the call setup message) of the first local exchange carrier requires echo cancellation operations and enables the Internet protocol trunk circuit to provide echo cancellation operations for the telephone call. (See page 13, lines 24-27 of the Specification.) Clearly, the Internet protocol trunk circuit is providing echo cancellation operations in addition to those already provided by the internal trunk of the local telecommunication switch.

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Dependent claims 25, 26 and 27 and claims 47, 48, and 49 add to claims 24 and 46, respectively, the fact that the echo cancellation capabilities of the Internet protocol trunk circuit may be adjusted with respect to echo tail length and that additional echo cancellation operations may be provided in the internal trunk circuit of the local telecommunication switch.

Dependent claims 28 and 29 and claims 50 and 51 add to claims 20 and 42, respectively, the fact that the Internet protocol trunk circuit can be handling a second call in addition to the first call and provide echo cancellation operations for a first local telephone switching office connected to the first local exchange carrier and that the echo cancellation capabilities are adjustable with respect to echo tail length. (See page 12, lines 7-11 of the Specification.)

Dependent claims 30 and 52 add to claims 29 and 51, respectively, the fact that an internal trunk circuit of the local telecommunication switch can provide additional echo cancellation operation to those being provided by the Internet protocol trunk circuit. (See page 14, lines 1-8 of the Specification.)

Dependent claim 31 and 53 add to claims 30 and 52, respectively, the fact that the echo cancellation capabilities of the internal trunk circuit may be adjusted.

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## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. **Claims 1-14, 16-21, 23-32, 34-43 and 45-53 stand rejected under 35 U.S.C. § 103(a).**

## VII. ARGUMENT

In the Office Action dated March 24, 2005, (hereafter "First Action"), the Examiner rejected originally filed claims 1, 3, 5, 7, 9, 11, 13, 14, 16-19, 32, 34, 36, 38, and 40 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,151,315 by G. R. Ash, et al. (Hereafter referred to as Ash). Further, the Examiner rejected claims 2, 4, 6, 8, 10, 12, 15, 20-31, 33, 35, 37, 39, and 40 1-53 as being unpatentable under 35 U.S.C. §103(a) over Ash in view of U.S. Patent No. 6,738,358, by A. Bist, et al. (hereafter referred to as Bist). In the response filed, June 21, 2005, (hereafter "First Response"), applicant pointed out that the rejection under 35 U.S.C. §102(e) did not meet the requirements of 35 U.S.C. §102(e) because it failed to disclose all the elements of the claim combination, or mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. Further, the applicant demonstrated that Ash did not disclose all of the operations of the claims. With respect to 35 U.S.C. §103(a) rejections, the applicant argued that since all dependent claims rejected under 35 U.S.C. §103(a) were patentable over Ash because they were dependent on independent claims shown to be patentable under 35 U.S.C. §102(e) and that Bist was not cited to correct the deficiencies of the 35 U.S.C. §102(e) rejection under Ash that these dependent claims were patentable under 35 U.S.C. §103(a).

In the Office Action of August 11, 2005, (hereafter "Second Action"), the Examiner continued the same rejections as in the First Action. The applicant demonstrated that claims 1, 3, 5, 7, 9, 11, 13, 14,

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16-19, 32, 34, 36, 38, and 40 were patentable under 35 U.S.C. §102(e) over Ash, in part, by amending these claims. In addition, applicant continued to point out that the rejection under 35 U.S.C. §102(e) did not meet the requirements of 35 U.S.C. §102(e) because Ash failed to disclose all the elements of the claim combination. Claims 2, 15, 22, 33, and 44 were canceled. With respect to 35 U.S.C. §103(a) rejections, once again, the applicant argued that since all dependent claims rejected under 35 U.S.C. §103(a) were patentable over Ash because they were dependent on independent claims shown to be patentable under 35 U.S.C. §102(e) and that Bist was not cited to correct the deficiencies of the 35 U.S.C. §102(e) rejection under Ash that these dependent claims were patentable under 35 U.S.C. §103(a).

In the Final Office Action of January 11, 2006, (hereafter "Final Action"), the Examiner rejected claims 1, 3-14, 16-21, 23-32, 34-43, and 45-53 under 35 U.S.C. §103(a) as being unpatentable over Ash in view of Bist.

**Claims 1, and 3-12 and Claims 32, and 34-41 stand rejected under 35 U.S.C. § 103(a).**

Claims 1, 3-12, 32 and 34-41 stand rejected as obvious in light of the combination of Ash and Bist, Ash was originally cited as anticipatory in the first Office Action. However, each of the Examiner's contentions regarding the obviousness rejections are demonstrably incorrect, and the applicant respectfully requests this Board to overturn these rejections.

It is well settled that in order to establish a prima facie case of obviousness, the Examiner is required to establish three criteria. First, the Examiner must find a reasonable motivation for combining the proposed references in either the references themselves or in information available

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to one of ordinary skill in the art. Second, the proposed combination must have had a reasonable likelihood of success. Third, the proposed combination must teach or suggest each and every limitation. Without conceding the other criteria for establishing a prima facie case of obviousness, the Applicant respectfully asserts that the Examiner's rejection does not satisfy the second and third criteria.

With respect to the third criteria, claim 1 is directed to a telecommunication switching system that comprises a plurality of local exchange carriers with each local exchange carrier having a plurality of local telephone switching offices, and a plurality of local telecommunication switches. Also, each of the local telephone switching offices and local telecommunication switches each have a plurality of telephone sets connected to them. As applicant clearly pointed out in the First Response, last paragraph, starting on page 27 - page 28, Ash discloses only two switching systems that are interconnected by trunks. Both of these switching systems are of the same type; whereas, a telecommunication switching system in accordance with claim 1 has a number of types of switching systems. In addition, claim 1 recites steps for controlling echoes in the various components of the telecommunication switching system. Applicant renewed this argument in the Second Response.

Consider the following operations of the local telecommunication switch (300) recited in claim 1 in greater detail: (1) receiving via a first trunk circuit (306, 331) a call setup message from a telephone set (326) that is connected to a first local telephone switching office (324) which is part of a local exchange carrier (329); (Note, that it is well known to those skilled in the art that a local exchange carrier provides intra-routing to allow the various local telephone switching offices to gain access to a variety of trunk circuits at different times.) (2) determining from the call

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setup message that the call is to be directed to another telephone set (336, 337) connected to another local exchange carrier (311); (3) determining that the first local telephone switching office requires echo cancellation operations and providing those echo cancellation operations. It is important to note that the determination is based on the identity of the local telephone switching office not the identity of the trunk or the local exchange carrier. This means that echo cancellation operations not needed for another local telephone switching office within the same local exchange carrier will not be provided.

In responding to the argument that claim 1 recited a number of different types of telecommunication switching units and various plurality of telephone sets, the Examiner has maintained that Ash discloses two switching systems and that the Webster dictionary defines plurality as "the state of being plural." Therefore, two is plural. Further, telephones are inherently connected to a telecommunication switching system such as disclosed in Ash as is defined in Newton's Telecom dictionary. (See Second Office Action, page 2, paragraph 1.) The Examiner is correct in that two switching systems are a plurality of switching systems. However, claim 1 does not simply recite one plurality of systems but a plurality of local exchange carriers, a plurality of local telecommunication switches, and a plurality of local telephone switching offices for each of the plurality of local exchange carriers. Ash simply does not disclose or suggest the telecommunication switching system that is recited in claim 1 and is clearly illustrated in FIG. 3 of applicant's specification. Nor, does Bist disclose or suggest such a telecommunication switching system.

Further, Ash and Bist singularly or in combination do not disclose or suggest the step of "determining by the one of the plurality of local telecommunication switches in response to the call setup message that a first one of a first plurality of local telephone switching offices of the one of



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the first plurality of local exchange carriers...requires echo cancellation operations..." Ash does not disclose suggest such a determination since Ash only shows two switching systems. If one postulates that one of Ash's telecommunication systems is the local telecommunication switch, then the remaining telecommunication switch of Ash cannot be one of a plurality of local telephone switching offices of one of the first plurality of local exchange carriers. Clearly, Ash simply does not have a sufficient number of telecommunication systems nor has the Examiner explain how Ash has a sufficient number of switching systems to perform this step of determining. The Examiner did cite in Ash, figure 1, column 4, lines 41-43, and column 3, lines 57-59 as disclosing the subject matter of claim 1. (See page 3, lines 11-13 of the First Office Action and the same text was also cited in the Second and Final Office Actions.) The figure and text cited by the Examiner do not disclose or suggest the subject matter of claim 1

With respect to the second criteria for establishing a prima facie case of obviousness, from the above discussion, it can be seen that the Examiner has not met this second criteria since the proposed combination of Ash and Bist has no reasonable likelihood of success.

Applicant respectfully submits that claim 1 is patentable under 35 U.S.C. §103(a) in view of Ash and Bist.

Applicant respectfully submits that dependent claims 3-12 which are directly or indirectly dependent on independent claim 1 are also patentable under 35 U.S.C. §103(a) for at least the same reasons as set forth with respect to independent claim 1.

**Dependent claims 5, 7, 9, and 11 standing alone.**

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Dependent claim 5 recites that the local telecommunication switch has a switching network and the first trunk circuit, a second trunk circuit, and a third trunk circuit. Claim 5 recites the operations of the local telecommunication switch as verifying that the second trunk circuit has echo cancellation capabilities, establishing an internal path between the first trunk circuit and the second trunk circuit and enabling the second trunk circuit to provide echo cancellation on audio information coming from the third trunk circuit which connects the second call path to the local telecommunication switch rather than the third trunk circuit providing the echo cancellation operations. In the Final Office Action, page 4, second paragraph, the Examiner cites Ash, column 4, lines 33-43, as disclosing these operations and states "(disclosing a plurality of interconnected trunk circuits on the network, an activation of echo cancellation if necessary)." The text cited by the Examiner simply does not disclose or suggest that one trunk circuit is providing echo cancellation operation for another trunk circuit. Note, the Examiner cited the same text in the First Office Action and the Second Office Action.

Dependent claim 7 recites operations where the first trunk circuit is connecting the first call path to the local telecommunication switch and a second trunk circuit is connecting the second call path to the telecommunication switch. The two call paths are then switched internal to the local telecommunication switch. Claim 7 recites that the second trunk circuit provides additional echo cancellation operations to those already provided by the first trunk circuit for the first call path. Again, the Examiner cites column 4, lines 33-43 of Ash as disclosing this operation. Clearly, the text cited by the Examiner does not disclose or suggest the operations recited in claim 7.

Dependent claim 9 is similar to claim 7 where the second trunk circuit is providing additional echo cancellation operations for the first call

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path. In addition, claim 9 also recites that a determination is made whether the local telephone switching office connected to the second local exchange carrier in the second call path also requires echo cancellation operations. If the determination is yes, the third trunk circuit provides echo cancellation operations for audio information coming from the second call path. Again, the Examiner cited column 4, lines 33-43 of Ash as disclosing this operation. Clearly, the text cited by the Examiner does not disclose or suggest the operations recited in claim 9.

Dependent claim 11 adds to the claim 1 a second trunk circuit that is connected to the second call path from the first local telecommunication switch to a first one of a second plurality of local telephone switching offices of the second local exchange carrier. The local telecommunication switch enables the first circuit trunk to provide echo cancellation operations for the first call path and enables the second circuit trunk to provide echo cancellation operations for the second call path. Again, the Examiner cited column 4, lines 33-43 of Ash as disclosing this operation. Clearly, the text cited by the Examiner does not disclose or suggest the operations recited in claim 11.

Applicant respectfully submits that claims 32 and 34-41 are patentable for the same reasons as set forth with respect to claims 1 and 3-12.

**Claims 13, 14, and 16-19 stand rejected under 35 U.S.C. § 103(a).**

Claims 13, 14, and 16-19 stand rejected as obvious in light of the combination of Ash and Bist, Ash was originally cited as anticipatory in the first Office Action. However, each of the Examiner's contentions regarding the obviousness rejections are demonstrably incorrect, and the applicant respectfully requests this Board to overturn these rejections.

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Without conceding the first criteria, Applicant respectfully asserts that in the Examiner has not established the second and third criteria for a prima facie case of obviousness with respect to these claims.

With respect to the third criteria, claim 13 is directed to a telecommunication switching system that comprises a plurality of local exchange carriers with each of the local exchange carriers having a plurality of local telephone switching offices. Each of these local telephone switching offices is connected to a plurality of telephone sets. The telecommunication switching system also comprises a plurality of local telecommunication switches (300, 401). the first local telecommunication switch (300) is connected to a first one (311) of the local exchange carriers via a first trunk circuit (304), a third one (402) of the plurality of local exchange carriers and a second local telecommunication switch (401). The first local telecommunication switch is connected to a second one (329) of the plurality of local exchange carriers via a second (331) and third (306) trunk circuits. As previously stated, applicant had clearly pointed out in the First Response, Ash discloses only two switching systems that are interconnected by trunks. Both of these switching systems are of the same type; whereas, a telecommunication switching system in accordance with claim 13 has a number of types of switching systems. In addition, claim 13 recites steps for controlling echoes in the various components of the telecommunication switching system. (Applicant renewed this argument in the Second Response.)

Consider the following operations of the first local telecommunication switch (300) recited in claim 13 in detail: (1) receiving via the first trunk (304) a call setup message on a first path from a telephone set (336, 337) connected to one (311) of a first plurality of local exchange carriers via the third one (402) of local exchange carriers and

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the second one (401) of the plurality of local telecommunication switches; (2) determining from the call setup message that the call is to be directed to another telephone set (325, 326) connected to one (322-324) of a second plurality of local telephone switching offices of one (329) of a second plurality of local exchange carriers; (3) determining that a first one of the first (319, 321) plurality of local telephone switching offices of the one of the first plurality of local exchange carriers to which the one of the first plurality of telephone sets is connected requires echo cancellation operations and providing the echo cancellation operations on the first path for the first one of the first plurality of local telephone switching offices by the first trunk circuit. It is important to note that the determination to provide echo cancellation operations is based on the identity of the local telephone switching office not the identity of the telephone set, trunk circuit or local exchange carrier. This means that echo cancellation operations not needed for another local telephone switching office within the same local exchange carrier will not be provided.

Ash and Bist singularly or in combination do not disclose or suggest the step of "determining by the first one of the plurality of local telecommunication switches in response to the call setup message that a first one of the first plurality of local telephone switching offices of the one of the first plurality of local exchange carriers to which the one of the first plurality of telephone sets is connected requires echo cancellation operations." Ash does not disclose or suggest such a determination since Ash only shows two switching systems. If one postulates that one of Ash's telecommunication systems is the local telecommunication switch, then the remaining telecommunication switch of Ash cannot be one of a plurality of local telephone switching offices of one of the first plurality of local exchange carriers, second local telecommunication switch, and a third local exchange carrier. Clearly, Ash simply does not have a sufficient number of telecommunication systems nor has the Examiner explained

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how Ash has a sufficient number of switching systems to perform this step of determining. The Examiner did cite an Ash, figure 1, column 4, lines 41-43, and column 3, lines to 57-59 as disclosing the subject matter of claim 13. However, the figure and text cited by the Examiner do not disclose or suggest the subject matter of claim 13.

With respect to the second criteria for establishing a prima facie case of obviousness, from the above discussion, it can be seen that the Examiner has not met this second criteria since the proposed combination of Ash and Bist has no reasonable likelihood of success.

Applicant respectfully submits that claim 13 is patentable under 35 U.S.C. §103(a) in view of Ash and Bist.

Applicant respectfully submits that dependent claims 14 and 16-19 which are directly or indirectly dependent on independent claim 13 are also patentable under 35 U.S.C. §103(a) for at least the same reasons as set forth with respect to independent claim 13.

**Dependent claims 16-18 standing alone.**

Dependent claim 16 discloses that the first local telecommunication switch has a network and the first trunk circuit, a second trunk circuit, and a third trunk circuit. The third trunk circuit is part of a second call path from the first one of the plurality of local telecommunication switches to the first one of the second plurality of local telephone switching offices of the one of the second plurality of local exchange carriers. Claim 16 recites that operations of the first local telecommunication switch are: (1) verifying that the second trunk circuit has echo cancellation capabilities; (2) establishing an internal path from the first and second call paths through the first trunk circuit, switching network, second trunk circuit, switching network and third trunk circuit; (3) enabling the second trunk circuit to

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provide echo cancellation operations on audio information coming from the first trunk circuit which is from the first call path. The end result is that the first and second trunk circuits are both supplying echo cancellation operations on the audio information of the first call path. Note, the second trunk circuit is not actively communicating either of the first or second call paths. The Examiner cites column 4, lines 33-43 and states "(disclosing a plurality of interconnected trunk circuits on the network, an activation of echo cancellation if necessary)." (See Final Office Action, page 4, second paragraph, also stated in First and Second Office Actions.) The text cited by the Examiner in the Final Office Action simply does not disclose or suggest that two trunk circuits are both providing echo cancellation operations for the same call path.

Dependent claim 17 recites a second trunk circuit (309) in addition to the first trunk circuit. The second trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the second plurality of local exchange carriers. Claim 17 recites that the operations of the first local telecommunication switch are: (1) verifying that the second trunk circuit has echo cancellation capabilities. (2) establishing an internal path from the first and second call paths through the first trunk circuit, switching network and second trunk circuit. (3) enabling the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit which is audio information coming from the first call path. Again, the Examiner cites column 4, lines 33-43 and states "(disclosing a plurality of interconnected trunk circuits on the network, an activation of echo cancellation if necessary)." The text cited by the Examiner in the First, Second and Final Office Actions simply does not disclose or suggest that two trunk circuits are providing echo cancellation operations for the same call path, where one of the two trunk circuits is communicating the second call path.

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Dependent claim 18 recites a second (309) and third (306) trunk circuits in addition to the first trunk circuit. The third trunk circuit is part of a second call path from the first local telecommunication switch to the first one of the second plurality of local telephone switching offices of the one of the second plurality of local exchange carriers. Claim 18 recites that the operations of the first local telecommunication switch are: (1) verifying that the second trunk circuit has echo cancellation capabilities. (2) establishing an internal path from the first and second call paths through the first trunk circuit, switching network, second trunk circuit, switching network and third trunk circuit. (3) enabling the second trunk circuit to provide echo cancellation operations on audio information coming from the first trunk circuit. (4) determining by the first local telecommunication switch that the first one of the second plurality of local telephone switching offices of the one of the second plurality of local exchange carriers to which the one on the second plurality of telephone sets is connected requires echo cancellation operations. (5) enabling the third trunk circuit to provide echo cancellation operations on audio information coming from the second call path. Again, the Examiner cites column 4, lines 33-43 and states "(disclosing a plurality of interconnected trunk circuits on the network, an activation of echo cancellation if necessary)." The text cited by the Examiner in the First, Second and Final Office Actions simply does not disclose or suggest that two trunk circuits are both providing echo cancellation operations for the same call path and that a third trunk circuit is providing echo cancellation operations on another other call path.

**Claims 20, 21, and 23-31 Claims 42, 43 and 45-53 stand rejected under 35 U.S.C. § 103(a).**

Claims 20, 21, 23-31, 42, 43, and 45-53 stand rejected as obvious in light of the combination of Ash and Bist, Ash was originally cited as anticipatory in the first Office Action. However, each of the Examiner's contentions regarding the obviousness rejections are demonstrably



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incorrect, and the applicant respectfully requests this Board to overturn these rejections.

Without conceding the first criteria, Applicant respectfully asserts that in the Examiner has not established the second and third criteria for a prima facie case of obviousness with respect to these claims.

With respect to the third criteria, claim 20 is directed to a method for controlling echoes within a telecommunication switching system (FIG. 3), having a plurality of local exchange carriers (329, 311), a plurality of local telecommunication switches (300), wide area network (313), pluralities of soft phones (314, 318), a plurality of remote switches (316). Each of the plurality of local exchange carriers is connected to a plurality of telephone sets (319, 321, 325, 326) via a plurality of local telephone switching offices (322-324, 319, 321). Each of the plurality of remote switches is connected to a first plurality of soft phones (318). Each of the plurality of remote switches provides echo cancellation circuits for eliminating echoes produced by the first plurality of soft phones with the echo length being adjustable. Each of the second plurality of soft phones is connected to the local telecommunication switch via the wide area network and each of the second plurality of soft phones provides an echo cancellation circuit having a echo tail length adjusted to eliminate an echo produced by each of the plurality of the soft phones.

As applicant previously noted and clearly pointed out in the First and Second Responses, Ash discloses only two switching systems that are interconnected by trunks. Both of the switching systems are of the same type; whereas, a telecommunication switching system in accordance with claim 20 has a number of types of switching system including remote switches and soft phones plus a wide area network. In

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addition, claim 20 recites steps for controlling echoes in the different components of the telecommunication system.

Consider the following operations of the telecommunication switching system recited in claim 20 in greater detail: (1) each of the plurality of remote switches provides echo cancellation circuits for eliminating echoes produced by the soft phones which are attached to each of the remote switches. (2) Each of the soft phones that is directly connected to the wide area network provides an echo cancellation circuit to eliminate the echo produced by that soft phone. (3) The local telecommunication switch that connects the one of the plurality of local exchange carriers to the wide area network via a plurality of trunk circuits provides echo cancellation for echoes produced by the one of the plurality of local exchange carriers on an individual call path basis.

The Examiner responded to Applicant's arguments set forth in the First and Second Responses by setting forth the same arguments as were set forth with respect to independent claim 1 and independent claim 13 which was to state that Ash discloses these operations in figure 1 and column 4, lines 42-43. The Examiner did note that the ability to adjust the echo tail length was missing from Ash but that this was disclosed in Bist in figure 28 and column 50, lines 32-36. Ash in combination with Bist does not disclose the operations recited in claim 20 as performed by the various switching systems and soft phones of claim 20.

With respect to the second criteria for establishing a prima facie case of obviousness, from the above discussion, it can be seen that the Examiner has not met this second criteria since the proposed combination of Ash and Bist has no reasonable likelihood of success.

Applicant respectfully submits that claim 20 is patentable under 35 U.S.C. §103(a) in view of Ash and Bist.

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Applicant respectfully submits that dependent claims 21 and 23-31 which are directly or indirectly dependent on independent claim 13 are also patentable under 35 U.S.C. §103(a) for at least the same reasons as set forth with respect to independent claim 20.

**Dependent claims 21 and 23 standing alone.**

Dependent claim 21 recites that the step of providing echo cancellation operation in each of the plurality of trunk circuits of claim 20 is done by determining by the local telecommunication switch from the call setup message that a first one of a plurality of local telephone switching offices of the one on the first plurality of local exchange carriers to which the telephone set is connected requires echo cancellation operations and enabling a one of the plurality of trunk circuits to provide the echo cancellation operation. The Examiner stated that Ash, column 4, lines 33-43 discloses these operations. Clearly, the text cited in Ash does not disclose or suggest that a determination of the need for echo cancellation operations is made on the basis of a local telephone switching office that is part of a local exchange carrier.

Dependent claim 23 recites that the step of providing echo cancellation operation further comprises providing additional echo cancellation operation in the Internet protocol trunk circuit. The end result is that the echo cancellation operations of the trunk circuits of the local telecommunication system are supplemented by the Internet protocol trunk circuit. In the Final Office Action, page 13, second paragraph, the Examiner stated "the Internet protocol trunks circuit is missing from Ash. However, Bist discloses in figure 28 and column 50, lines 32-36, and column 10, line 58, echo cancellation in an IP network. It would have been obvious to one skilled in the art at the time of the invention to connect to WAN using an IP trunk and provide echo cancellation on the

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trunk." However, claim 23 recites that additional echo cancellation is provided by the Internet protocol trunk circuit not just that the Internet protocol trunk circuit is providing echo cancellation for the WAN.

Applicant respectfully submits that claims 42, 43 and 45-53 are patentable for the same reasons as claims 20, 21 and 23-31.

#### VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on 11/01/2005.

#### IX. EVIDENCE

No evidence pursuant to § 1.130, 1.131, or 1.132, or entered by or relied upon by the Examiner, is being submitted.

#### X. RELATED PROCEEDINGS

No related proceedings as indicated in II. above.

Respectfully submitted,

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**APPENDIX A****Claims Involved in the Appeal of Application Serial No. 09/943,283**

1                   1. (Previously Amended) A method for controlling echoes  
2 within a telecommunication switching system having a plurality of local  
3 exchange carriers and a plurality of local telecommunication switches  
4 where each of the plurality of local exchange carriers is connected to a  
5 plurality of telephone sets attached to a plurality of local telephone  
6 switching offices of each of the plurality of local exchange carriers and  
7 each of the plurality of local telecommunication switches is connected to a  
8 plurality of telephone sets, comprising the steps of:  
9                   receiving by one of the plurality of local telecommunication  
10 switches a call setup message from one of a first plurality of telephone  
11 sets connected to one of a first plurality of local exchange carriers with a  
12 first trunk circuit interconnecting the one of the plurality of local  
13 telecommunication switches with the one of the first plurality of local  
14 exchange carriers;  
15                   determining by the one of the plurality of local  
16 telecommunication switches that the call setup message designates one  
17 of a second plurality of telephone sets connected to one of a second  
18 plurality of local exchange carriers as a destination of the call setup  
19 message;  
20                   determining by the one of the plurality of local  
21 telecommunication switches in response to the call setup message that a  
22 first one of a first plurality of local telephone switching offices of the one of  
23 the first plurality of local exchange carriers to which the one of the first  
24 plurality of telephone sets is connected requires echo cancellation  
25 operations;

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26 providing by the one of the plurality of local telecommunication  
27 switches in response to the determination that echo cancellation  
28 operations are required for the first one of the first plurality of local  
29 telephone switching offices echo cancellation operations for a first call  
30 path from the one of the plurality of local telecommunication switches to  
31 the first one of the first plurality of the local telephone switching offices of  
32 the first one of the plurality of local exchange carriers; and  
33 adjusting the echo cancellation capabilities of the first trunk  
34 circuit with respect to an echo tail length upon the first call path being  
35 established.

1 2. (Canceled)

1 3. (Original) The method of claim 1 wherein the step of  
2 providing comprises the steps of verifying that the first trunk circuit has  
3 echo cancellation capabilities;  
4 activating the first trunk circuit to provide echo cancellation  
5 operations on the first call path.

1 4. (Original) The method of claim 3 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the first trunk circuit with respect to an echo tail length for  
4 the first call path.

1 5. (Original) The method of claim 1 wherein the one of the  
2 plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second  
5 call path from the one of the plurality of local telecommunication switches  
6 to the first one of the second plurality of local telephone switching offices  
7 of the one of the second plurality of local exchange carriers and the step

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8 of providing comprises the steps of verifying that the second trunk circuit  
9 has echo cancellation capabilities;  
10 establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, second trunk circuit,  
12 switching network and third trunk circuit; and  
13 enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the third trunk circuit.

1 6. (Original) The method of claim 5 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the second trunk circuit with respect to an echo tail length  
4 for the second call path.

1 7. (Original) The method of claim 1 wherein the one of the  
2 plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit and a second trunk circuit are  
4 connected where the second trunk circuit is part of a second call path from  
5 the one of the plurality of local telecommunication switches to the first one  
6 of the second plurality of local telephone switching offices of the one of the  
7 second plurality of local exchange carriers and the step of providing  
8 comprises the steps of verifying that the second trunk circuit has echo  
9 cancellation capabilities;  
10 establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network and second trunk  
12 circuit; and  
13 enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first trunk circuit.

1 8. (Original) The method of claim 7 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation

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3 capabilities of the first trunk circuit with respect to an echo tail length for  
4 the first call path.

1           9. (Original) The method of claim 1 wherein the one of the  
2 plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second  
5 call path from the one of the plurality of local telecommunication switches  
6 to the first one of the second plurality of local telephone switching offices  
7 of the one of the second plurality of local exchange carriers and the step  
8 of providing comprises the steps of verifying that the second trunk circuit  
9 has echo cancellation capabilities;  
10           establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, second trunk circuit,  
12 switching network and third trunk circuit;  
13           enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first trunk circuit;  
15           determining by the one of the plurality of local  
16 telecommunication switches in response to the call setup message that a  
17 first one of the plurality of local telephone switching offices of the one of  
18 the second plurality of local exchange carriers to which the one of the  
19 second plurality of telephone sets is connected requires echo cancellation  
20 operations; and  
21           enabling the third trunk circuit to provide echo cancellation  
22 operations on audio information coming from the second call path.

1           10. (Original) The method of claim 9 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the third trunk circuit with respect to an echo tail length for  
4 the second call path.



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1           11. (Original) The method of claim 1 wherein the one of the  
2 plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit and a second trunk circuit are  
4 connected where the second trunk circuit is part of a second call path from  
5 the one of the plurality of local telecommunication switches to the first one  
6 of the second plurality of local telephone switching offices of the one of the  
7 second plurality of local exchange carriers and the step of providing  
8 comprises the steps of verifying that the second trunk circuit has echo  
9 cancellation capabilities;  
10           establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, and second trunk  
12 circuit;  
13           enabling the first trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first call path;  
15           determining by the one of the plurality of local  
16 telecommunication switches in response to the call setup message that  
17 the first one of the second plurality of local telephone switching offices of  
18 the one of the second plurality of local exchange carriers to which the one  
19 of the second plurality of telephone sets is connected requires echo  
20 cancellation operations; and  
21           enabling the second trunk circuit to provide echo cancellation  
22 operations on audio information coming from the second call path.

1           12. (Original) The method of claim 11 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the second trunk circuit with respect to an echo tail length  
4 for the second call path.

1           13. (Previously Amended) A method for controlling echoes  
2 within a telecommunication switching system having a plurality of local

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3 exchange carriers, and a plurality of local telecommunication switches  
4 where each of the plurality of local exchange carriers is connected to a  
5 plurality of telephone sets attached to a plurality of local telephone  
6 switching offices of each of the plurality of local exchange carriers and  
7 each of the plurality of local telecommunication switches is connected to a  
8 plurality of telephone sets and a first and second ones of the plurality of  
9 local telecommunication switches interconnected by a third plurality of  
10 local exchange carriers, comprising the steps of:  
11 receiving by one of the plurality of local telecommunication  
12 switches a call setup message from one of a first plurality of telephone  
13 sets connected to one of a first plurality of local exchange carriers via the  
14 third plurality of local exchange carriers and the second one of the plurality  
15 of local telecommunication switches and a first trunk circuit  
16 interconnecting the first one of the plurality of local telecommunication  
17 switches with the third one of the plurality of local exchange carriers;  
18 determining by the first one of the plurality of local  
19 telecommunication switches that the call setup message designates one  
20 of a second plurality of telephone sets connected to one of a second  
21 plurality of local telephone switching offices of one of a second plurality of  
22 local exchange carriers as a destination of the call setup message;  
23 determining by the first one of the plurality of local  
24 telecommunication switches in response to the call setup message that a  
25 first one of a first plurality of local telephone switching offices of the one of  
26 the first plurality of local exchange carriers to which the one of the first  
27 plurality of telephone sets is connected requires echo cancellation  
28 operations;  
29 providing by the first one of the plurality of local  
30 telecommunication switches in response to the determination that echo  
31 cancellation operations are required for the first one of the first plurality of  
32 local telephone switching offices echo cancellation operations for a first

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33 call path from the first one of the plurality of local telecommunication  
34 switches to the first one of the first plurality of the local telephone  
35 switching offices of the first one of the plurality of local exchange carriers;  
36 and  
37 adjusting the echo cancellation capabilities of the first trunk  
38 circuit with respect to an echo tail length upon the first call path being  
39 established.

1 14. (Original) The method of claim 13 wherein the step of  
2 providing comprises the steps of verifying that the first trunk circuit has  
3 echo cancellation capabilities;  
4 activating the first trunk circuit to provide echo cancellation  
5 operations on the first call path.

1 15. (Canceled)

1 16. (Original) The method of claim 13 wherein the first one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second  
5 call path from the first one of the plurality of local telecommunication  
6 switches to the first one of the second plurality of local telephone switching  
7 offices of the one of the second plurality of local exchange carriers and the  
8 step of providing comprises the steps of verifying that the second trunk  
9 circuit has echo cancellation capabilities;  
10 establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, second trunk circuit,  
12 switching network and third trunk circuit; and  
13 enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first trunk circuit.

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1           17. (Original) The method of claim 13 wherein the first one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit and a second trunk circuit are  
4 connected where the second trunk circuit is part of a second call path from  
5 the first one of the plurality of local telecommunication switches to the first  
6 one of the second plurality of local telephone switching offices of the one  
7 of the second plurality of local exchange carriers and the step of providing  
8 comprises the steps of verifying that the second trunk circuit has echo  
9 cancellation capabilities;  
10           establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network and second trunk  
12 circuit; and  
13           enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first trunk circuit.

1           18. (Original) The method of claim 13 wherein the first one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second  
5 call path from the first one of the plurality of local telecommunication  
6 switches to the first one of the second plurality of local telephone switching  
7 offices of the one of the second plurality of local exchange carriers and the  
8 step of providing comprises the steps of verifying that the second trunk  
9 circuit has echo cancellation capabilities;  
10           establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, second trunk circuit,  
12 switching network and third trunk circuit;  
13           enabling the second trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first trunk circuit;

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15                   determining by the first one of the plurality of local  
16 telecommunication switches in response to the call setup message that a  
17 first one of the second plurality of local telephone switching offices of the  
18 one of the second plurality of local exchange carriers to which the one of  
19 the second plurality of telephone sets is connected requires echo  
20 cancellation operations; and  
21                   enabling the third trunk circuit to provide echo cancellation  
22 operations on audio information coming from the second call path.

1                   19. (Original) The method of claim 13 wherein the first one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit and a second trunk circuit are  
4 connected where the second trunk circuit is part of a second call path from  
5 the first one of the plurality of local telecommunication switches to the first  
6 one of the second plurality of local telephone switching offices of the one  
7 of the second plurality of local exchange carriers and the step of providing  
8 comprises the steps of verifying that the second trunk circuit has echo  
9 cancellation capabilities;  
10                   establishing an internal path from the first and second call  
11 paths through the first trunk circuit, switching network, and second trunk  
12 circuit;  
13                   enabling the first trunk circuit to provide echo cancellation  
14 operations on audio information coming from the first call path;  
15                   determining by the first one of the plurality of local  
16 telecommunication switches in response to the call setup message that  
17 the first one of the second plurality of local telephone switching offices of  
18 the one of the second plurality of local exchange carriers to which the one  
19 of the second plurality of telephone sets is connected requires echo  
20 cancellation operations; and

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21 enabling the second trunk circuit to provide echo cancellation  
22 operations on audio information coming from the second call path.

1 20. (Previously Amended) A method for controlling echoes  
2 within a telecommunication switching system having a plurality of local  
3 exchange carriers, a wide area network, pluralities of softphones, a  
4 plurality of remote switches, and a plurality of local telecommunication  
5 switches where each of the plurality of local exchange carriers is  
6 connected to a plurality of telephone sets attached to a plurality of local  
7 telephone switching offices of each of the plurality of local exchange  
8 carriers and each of the plurality of local telecommunication switches is  
9 connected to a plurality of telephone sets and each of the plurality of  
10 remote switches is connected to a first plurality of softphones, comprising  
11 the steps of:  
12 connecting the plurality of remote switches to each of the  
13 plurality of local telecommunication switches via the wide area network;  
14 providing echo cancellation circuits in each of the plurality of  
15 remote switches with each echo cancellation circuit having an echo tail  
16 length adjusted to eliminate an echo produced by each of the first plurality  
17 of softphones;  
18 connecting each of a second plurality of softphones to each of  
19 the plurality of local telecommunication switches via the wide area  
20 network;  
21 providing an echo cancellation circuit in each of the second  
22 plurality of softphones having an echo tail length adjusted to eliminate an  
23 echo produced by each of the second plurality of softphones;  
24 connecting one of the plurality of local exchange carriers to the  
25 wide area network via one of the plurality of local telecommunication  
26 switches with the one of the plurality of local exchange carriers  
27 interconnected to the one of the plurality of local telecommunication

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28 switches by a plurality of trunk circuits in the one of the plurality of local  
29 telecommunication switches;  
30 providing echo cancellation operations in each of the plurality of  
31 trunk circuits adjusted to eliminate echoes produced by the one of the  
32 plurality of local exchange carriers on an individual call path basis; and  
33 adjusting the echo cancellation capabilities of the first trunk  
34 circuit with respect to an echo tail length upon the first call path being  
35 established.

1 21. (Original) The method of claim 20 wherein the step of  
2 providing echo cancellation operation in each of the plurality of trunk  
3 circuits comprises the steps of determining by the one of the plurality of  
4 local telecommunication switches that a call setup message received from  
5 the one of the plurality of local exchange carriers via one of the plurality of  
6 trunk circuits designates one of the first plurality of softphones connected  
7 to the one of the plurality of the local exchange carriers;  
8 determining by the one of the plurality of local  
9 telecommunication switches in response to the call setup message that a  
10 first one of a plurality of local telephone switching offices of the one of the  
11 first plurality of local exchange carriers to which the one of the plurality of  
12 telephone sets is connected requires echo cancellation operations; and  
13 enabling the one of the plurality of trunk circuits to provide an  
14 echo cancellation operation for a telephone call associated with the call  
15 setup message.

1 22. (Canceled)

1 23. (Previously Amended) The method of claim 20 wherein  
2 the one of the plurality of local telecommunication switches is connected  
3 to the wide area network by a Internet Protocol trunk circuit and the step of

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4 providing the echo cancellation operation further comprises providing an  
5 additional echo cancellation operation in the Internet Protocol trunk circuit.

1 24. (Original) The method of claim 20 wherein the one of the  
2 plurality of local telecommunication switches is connected to the wide area  
3 network by a Internet Protocol trunk circuit and the step of providing echo  
4 cancellation operation in the Internet Protocol trunk circuit comprises the  
5 steps of determining by the one of the plurality of local telecommunication  
6 switches that a call setup message received from the one of the plurality  
7 of local exchange carriers via one of the plurality of trunk circuits  
8 designates one of the first plurality of softphones connected to the one of  
9 the plurality of the local exchange carriers;

10 determining by the one of the plurality of local  
11 telecommunication switches in response to the call setup message that a  
12 first one of a plurality of local telephone switching offices of the one of the  
13 first plurality of local exchange carriers to which the one of the plurality of  
14 telephone sets is connected requires echo cancellation operations; and  
15 enabling the Internet Protocol trunk circuit to provide an echo  
16 cancellation operation for a telephone call associated with the call setup  
17 message.

1 25. (Original) The method of claim 24 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the Internet Protocol trunk circuit with respect to an echo tail  
4 length for the first call path.

1 26. (Original) The method of claim 25 wherein the step of  
2 providing the echo cancellation operation further comprises providing an  
3 additional echo cancellation operation in the one of the plurality of trunk  
4 circuits.



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1           27. (Original) The method of claim 26 wherein the step of  
2 further providing comprises the step of adjusting the echo cancellation  
3 capabilities of the one of the plurality of trunk circuits.

1           28. (Original) The method of claim 20 wherein the one of the  
2 plurality of local telecommunication switches is connected to the wide area  
3 network by a Internet Protocol trunk circuit and the step of providing echo  
4 cancellation operation in the Internet Protocol trunk circuit comprises the  
5 steps of further determining by the one of the plurality of local  
6 telecommunication switches that another call setup message received  
7 from the one of the plurality of local exchange carriers via one of the  
8 plurality of trunk circuits designates one of the second plurality of  
9 softphones connected to the one of the plurality of the local exchange  
10 carriers;

11           determining by the one of the plurality of local  
12 telecommunication switches in response to the call setup message that a  
13 first one of a plurality of local telephone switching offices of the one of the  
14 first plurality of local exchange carriers to which the one of the plurality of  
15 telephone sets is connected requires echo cancellation operations; and  
16           enabling the Internet Protocol trunk circuit to provide an echo  
17 cancellation operation for a telephone call associated with the other call  
18 setup message.

1           29. (Original) The method of claim 28 wherein the step of  
2 providing comprises the step of adjusting the echo cancellation  
3 capabilities of the Internet Protocol trunk circuit with respect to an echo tail  
4 length for the first call path.

1           30. (Original) The method of claim 29 wherein the step of  
2 providing the echo cancellation operation further comprises providing an

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3 additional echo cancellation operation in the one of the plurality of trunk  
4 circuits.

1 31. (Original) The method of claim 30 wherein the step of  
2 further providing comprises the step of adjusting the echo cancellation  
3 capabilities of the one of the plurality of trunk circuits.

1 32. (Previously Amended) An apparatus for controlling echoes  
2 within a telecommunication switching system having a plurality of local  
3 exchange carriers and a plurality of local telecommunication switches  
4 where each of the plurality of local exchange carriers is connected to a  
5 plurality of telephone sets attached to a plurality of local telephone  
6 switching offices of each of the plurality of local exchange carriers and  
7 each of the plurality of local telecommunication switches is connected to a  
8 plurality of telephone sets, comprising:

9 means for receiving by one of the plurality of local  
10 telecommunication switches a call setup message from one of a first  
11 plurality of telephone sets connected to one of a first plurality of local  
12 exchange carriers with a first trunk circuit interconnecting the one of the  
13 plurality of local telecommunication switches with the one of the first  
14 plurality of local exchange carriers;

15 means for determining by the one of the plurality of local  
16 telecommunication switches that the call setup message designates one  
17 of a second plurality of telephone sets connected to one of a second  
18 plurality of local exchange carriers as a destination of the call setup  
19 message;

20 means for determining by the one of the plurality of local  
21 telecommunication switches in response to the call setup message that a  
22 first one of a first plurality of local telephone switching offices of the one of  
23 the first plurality of local exchange carriers to which the one of the first

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24 plurality of telephone sets is connected requires echo cancellation  
25 operations;  
26 means for providing by the one of the plurality of local  
27 telecommunication switches in response to the determination that echo  
28 cancellation operations are required for the first one of the first plurality of  
29 local telephone switching offices echo cancellation operations for a first  
30 call path from the one of the plurality of local telecommunication switches  
31 to the first one of the first plurality of the local telephone switching offices  
32 of the first one of the plurality of local exchange carriers; and  
33 means for adjusting the echo cancellation capabilities of the  
34 first trunk circuit with respect to an echo tail length upon the first call path  
35 being established.

1 33. (Canceled)

1 34. (Original) The apparatus of claim 32 wherein the means  
2 for providing comprises means for verifying that the first trunk circuit has  
3 echo cancellation capabilities;  
4 means for activating the first trunk circuit to provide echo  
5 cancellation operations on the first call path.

1 35. (Original) The apparatus of claim 34 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the first trunk circuit with respect to an echo tail length for  
4 the first call path.

1 36. (Original) The apparatus of claim 32 wherein the one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second

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5 call path from the one of the plurality of local telecommunication switches  
6 to the first one of the second plurality of local telephone switching offices  
7 of the one of the second plurality of local exchange carriers and the  
8 means for providing comprises means for verifying that the second trunk  
9 circuit has echo cancellation capabilities;

10 means for establishing an internal path from the first and  
11 second call paths through the first trunk circuit, switching network, second  
12 trunk circuit, switching network and third trunk circuit; and

13 means for enabling the second trunk circuit to provide echo  
14 cancellation operations on audio information coming from the third trunk  
15 circuit.

1 37. (Original) The apparatus of claim 36 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the second trunk circuit with respect to an echo tail length  
4 for the second call path.

1 38. (Original) The apparatus of claim 32 wherein the one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit and a second trunk circuit are  
4 connected where the second trunk circuit is part of a second call path from  
5 the one of the plurality of local telecommunication switches to the first one  
6 of the second plurality of local telephone switching offices of the one of the  
7 second plurality of local exchange carriers and the means for providing  
8 comprises means for verifying that the second trunk circuit has echo  
9 cancellation capabilities;

10 means for establishing an internal path from the first and  
11 second call paths through the first trunk circuit, switching network and  
12 second trunk circuit; and

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13 means for enabling the second trunk circuit to provide echo  
14 cancellation operations on audio information coming from the first trunk  
15 circuit.

1 39. (Original) The apparatus of claim 38 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the first trunk circuit with respect to an echo tail length for  
4 the first call path.

1 40. (Original) The apparatus of claim 32 wherein the one of  
2 the plurality of local telecommunication switches comprises a switching  
3 network to which the first trunk circuit, a second trunk circuit, and a third  
4 trunk circuit are connected where the third trunk circuit is part of a second  
5 call path from the one of the plurality of local telecommunication switches  
6 to the first one of the second plurality of local telephone switching offices  
7 of the one of the second plurality of local exchange carriers and the  
8 means for providing comprises means for verifying that the second trunk  
9 circuit has echo cancellation capabilities;

10 means for establishing an internal path from the first and  
11 second call paths through the first trunk circuit, switching network, second  
12 trunk circuit, switching network and third trunk circuit;

13 means for enabling the second trunk circuit to provide echo  
14 cancellation operations on audio information coming from the first trunk  
15 circuit;

16 means for determining by the one of the plurality of local  
17 telecommunication switches in response to the call setup message that a  
18 first one of the plurality of local telephone switching offices of the one of  
19 the second plurality of local exchange carriers to which the one of the  
20 second plurality of telephone sets is connected requires echo cancellation  
21 operations; and

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22 means for enabling the third trunk circuit to provide echo  
23 cancellation operations on audio information coming from the second call  
24 path.

1 41. (Original) The apparatus of claim 40 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the third trunk circuit with respect to an echo tail length for  
4 the second call path.

1 42. (Previously Amended) An apparatus for controlling echoes  
2 within a telecommunication switching system having a plurality of local  
3 exchange carriers, a wide area network, pluralities of softphones, a  
4 plurality of remote switches, and a plurality of local telecommunication  
5 switches where each of the plurality of local exchange carriers is  
6 connected to a plurality of telephone sets attached to a plurality of local  
7 telephone switching offices of each of the plurality of local exchange  
8 carriers and each of the plurality of local telecommunication switches is  
9 connected to a plurality of telephone sets and each of the plurality of  
10 remote switches is connected to a first plurality of softphones, comprising:  
11 means for connecting the plurality of remote switches to each  
12 of the plurality of local telecommunication switches via the wide area  
13 network;

14 means for providing echo cancellation circuits in each of the  
15 plurality of remote switches with each echo cancellation circuit having an  
16 echo tail length adjusted to eliminate an echo produced by each of the first  
17 plurality of softphones;

18 means for connecting each of a second plurality of softphones  
19 to each of the plurality of local telecommunication switches via the wide  
20 area network;

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21 means for providing an echo cancellation circuit in each of the  
22 second plurality of softphones having an echo tail length adjusted to  
23 eliminate an echo produced by each of the second plurality of softphones;  
24 means for connecting one of the plurality of local exchange  
25 carriers to the wide area network via one of the plurality of local  
26 telecommunication switches with the one of the plurality of local exchange  
27 carriers interconnected to the one of the plurality of local  
28 telecommunication switches by a plurality of trunk circuits in the one of the  
29 plurality of local telecommunication switches;  
30 means for providing echo cancellation operations in each of the  
31 plurality of trunk circuits adjusted to eliminate echoes produced by the one  
32 of the plurality of local exchange carriers on an individual call path basis;  
33 and  
34 means for adjusting the echo cancellation capabilities of the  
35 first trunk circuit with respect to an echo tail length upon the first call path  
36 being established.

1 43. (Original) The apparatus of claim 42 wherein the means  
2 for providing echo cancellation operation in each of the plurality of trunk  
3 circuits comprises means for determining by the one of the plurality of  
4 local telecommunication switches that a call setup message received from  
5 the one of the plurality of local exchange carriers via one of the plurality of  
6 trunk circuits designates one of the first plurality of softphones connected  
7 to the one of the plurality of the local exchange carriers;  
8 means for determining by the one of the plurality of local  
9 telecommunication switches in response to the call setup message that a  
10 first one of a plurality of local telephone switching offices of the one of the  
11 first plurality of local exchange carriers to which the one of the plurality of  
12 telephone sets is connected requires echo cancellation operations; and

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13 means for enabling the one of the plurality of trunk circuits to  
14 provide an echo cancellation operation for a telephone call associated with  
15 the call setup message.

1 44. (Canceled)

1 45. (Original) The apparatus of claim 42 wherein the one of  
2 the plurality of local telecommunication switches is connected to the wide  
3 area network by a Internet Protocol trunk circuit and the means for  
4 providing the echo cancellation operation further comprises providing an  
5 additional echo cancellation operation in the Internet Protocol trunk circuit.

1 46. (Original) The apparatus of claim 42 wherein the one of  
2 the plurality of local telecommunication switches is connected to the wide  
3 area network by a Internet Protocol trunk circuit and the means for  
4 providing echo cancellation operation in the Internet Protocol trunk circuit  
5 comprises means for determining by the one of the plurality of local  
6 telecommunication switches that a call setup message received from the  
7 one of the plurality of local exchange carriers via one of the plurality of  
8 trunk circuits designates one of the first plurality of softphones connected  
9 to the one of the plurality of the local exchange carriers;  
10 means for determining by the one of the plurality of local  
11 telecommunication switches in response to the call setup message that a  
12 first one of a plurality of local telephone switching offices of the one of the  
13 first plurality of local exchange carriers to which the one of the plurality of  
14 telephone sets is connected requires echo cancellation operations; and  
15 means for enabling the Internet Protocol trunk circuit to provide  
16 an echo cancellation operation for a telephone call associated with the call  
17 setup message.



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1           47. (Original) The apparatus of claim 46 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the Internet Protocol trunk circuit with respect to an echo tail  
4 length for the first call path.

1           48. (Original) The apparatus of claim 47 wherein the means  
2 for providing the echo cancellation operation further comprises providing  
3 an additional echo cancellation operation in the one of the plurality of trunk  
4 circuits.

1           49. (Original) The apparatus of claim 48 wherein the means  
2 for providing comprises further adjusting the echo cancellation capabilities  
3 of the one of the plurality of trunk circuits.

1           50. (Original) The apparatus of claim 42 wherein the one of  
2 the plurality of local telecommunication switches is connected to the wide  
3 area network by a Internet Protocol trunk circuit and the means for  
4 providing echo cancellation operation in the Internet Protocol trunk circuit  
5 comprises means for further determining by the one of the plurality of local  
6 telecommunication switches that another call setup message received  
7 from the one of the plurality of local exchange carriers via one of the  
8 plurality of trunk circuits designates one of the second plurality of  
9 softphones connected to the one of the plurality of the local exchange  
10 carriers;

11           means for determining by the one of the plurality of local  
12 telecommunication switches in response to the call setup message that a  
13 first one of a plurality of local telephone switching offices of the one of the  
14 first plurality of local exchange carriers to which the one of the plurality of  
15 telephone sets is connected requires echo cancellation operations; and

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16 means for enabling the Internet Protocol trunk circuit to provide  
17 an echo cancellation operation for a telephone call associated with the  
18 other call setup message.

1 51. (Original) The apparatus of claim 50 wherein the means  
2 for providing comprises means for adjusting the echo cancellation  
3 capabilities of the Internet Protocol trunk circuit with respect to an echo tail  
4 length for the first call path.

1 52. (Original) The apparatus of claim 51 wherein the means  
2 for providing the echo cancellation operation further comprises providing  
3 an additional echo cancellation operation in the one of the plurality of trunk  
4 circuits.

1 53. (Original) The apparatus of claim 52 wherein the means  
2 for providing comprises further adjusting the echo cancellation capabilities  
3 of the one of the plurality of trunk circuits.

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**APPENDIX B**

None.

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**APPENDIX C**

None.